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PATENT SPECIFICATION

DRAWINGS ATTACHED.

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COMPLETE SPECIFICATION.

Improvements in and relating to Nozzles for Irrigation Apparatus.

We, CAMERON IRRIGATION COMPANY LIMITED, a British Company, of Harwood Industrial Estate, Littlehampton, Sussex, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to irrigation apparatus and more especially to an irrigation nozzle, known and hereinafter referred to as a trickle nozzle, adapted to be inserted in a pipe line of a land irrigation system.

The object of the invention is to provide a trickle nozzle especially adapted to be fitted in a flexible pipe line made for example from synthetic plastics, such as flexible P.V.C., or rubber and which nozzle is designed to allow the discharge of a predetermined quantity of water from the flexible pipe line per unit of time. With this object in view the trickle nozzle according to the invention comprises an externally screw threaded stud adapted to be secured in a hole in said flexible pipe line and having an axial passage therethrough, an internally screw threaded tubular member screwed onto said stud externally of said pipe line, and an externally screw threaded plug screwed into the outlet end of said tubular member, the screw threads of said plug and said tubular member being so formed that a helical passage or channel through which water can flow is formed between said tubular member and plug.

In order that the invention may be more clearly understood one particular embodiment thereof will now be described by way of example, with reference to the accompanying drawings in which:—

[Price 4s. 6d.]

Figure 1 is an exploded view of the component parts of the trickle nozzle according to the invention shown partly in longitudinal section, and

Figure 2 is a similar view but showing the nozzle in assembled condition and fitted in a flexible pipe line.

Referring to these drawings the trickle nozzle comprises an internally screw threaded tubular member 3, an externally screw threaded stud or button 4 adapted to be passed through a hole in the wall 5 (Figure 2) of a flexible pipe line to secure the nozzle at its inlet end in said pipe line, and an externally screw threaded plug 6 screwed into the outlet or free end of said tubular member 3.

The stud or button 4 is provided at one end with a radial flange 7 and a shank portion provided at the other end with external screw thread, said shank portion being provided between the screw threaded portion and the flange 7 with a plain cylindrical portion 8. The stud or button 4 is further provided with an axial bore 9 forming a passage for the flow of water from the flexible pipe 5 into the cylindrical member 3 of the trickle nozzle.

The trickle nozzle is fitted into the flexible pipe by forcing the flange 7 through a suitably dimensioned hole in the wall 5 of the flexible pipe and then screwing the tubular member 3 onto the outer end of the button or stud, whereby an annular portion of the wall 5 of the flexible pipe surrounding the hole therein is clamped, in liquid tight manner, between the flange 7 and the end of the tubular member 3 as shown in Figure 2.

The plug 6 is provided with an outer head portion 10 and an externally screw threaded

shank portion 11 which screws into the outlet end of the tubular member 3. The thread on the plug 6 and the thread in the tubular member 3 are so formed, for example truncated, that when the plug 6 is screwed into the tubular member 3 a restricted helical passage or channel through which the water can flow is formed between the plug 6 and the tubular member 3 as shown at 12 in Figure 2. It will be understood that the resistance to the flow of water through said passage as channel 12 will depend upon the length of said passage or channel and the length of said passage or channel can be varied by varying the distance by which the plug 6 is screwed into the tubular member 3. Thus the volume of water passing through the trickle nozzle per unit of line can be regulated by adjusting the axial position of the plug 6 in the tubular member 3. Alternatively the plug may be provided with a length of thread calculated to give a predetermined volume of flow when the plug 6 is screwed into the tubular member 3 to the maximum extent, in which case care must be taken that the head portion 10 of the plug is of such dimensions that it does not close the end of the tubular member 3 when screwed into said tubular portion to its maximum extent, that is the outer diameter or cross-sectional dimension of the head 10 must be smaller than the internal diameter of the outlet end of the tubular member 3.

It will be understood from the foregoing that with a trickle nozzle according to the invention not only can the volume of water discharged through the nozzle per unit of time be regulated but also the pressure height of the water discharged can also be regulated.

WHAT WE CLAIM IS:—

1. A trickle nozzle for fitting in a flexible pipe line of a land irrigation system, comprising an externally screw threaded stud adapted to be secured in a hole in said flexible pipe line and having an axial passage therethrough, an internally screw threaded tubular member screwed onto said stud externally of said pipe line, and an externally screw threaded plug screwed into the outlet end of said tubular member, the screw threads of said plug and said tubular member being so formed that a helical passage or channel through which water can flow is formed between said tubular member and plug.

2. A trickle nozzle according to claim 1, wherein said stud comprises a shank portion provided at one end with a radial flange and at the other end with external screw threads with a plain cylindrical portion between said radial flange and said screw threads.

3. A trickle nozzle according to claim 1 or 2, wherein said plug is provided at its outer end with a head portion whose outer diameter or cross-sectional dimension is smaller than the internal diameter of the outlet end of said tubular member.

4. A trickle nozzle for fitting in a flexible pipe line of a land irrigation system constructed and adapted to be used substantially as herein described with reference to the accompanying drawings.

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COMPLETE SPECIFICATION

This drawing is a reproduction of the Original on a reduced scale

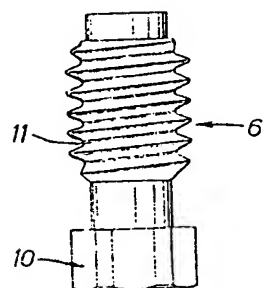
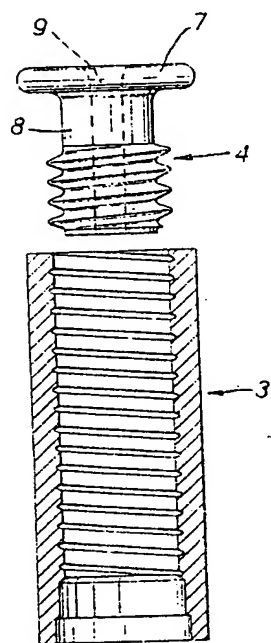


FIG. 1.

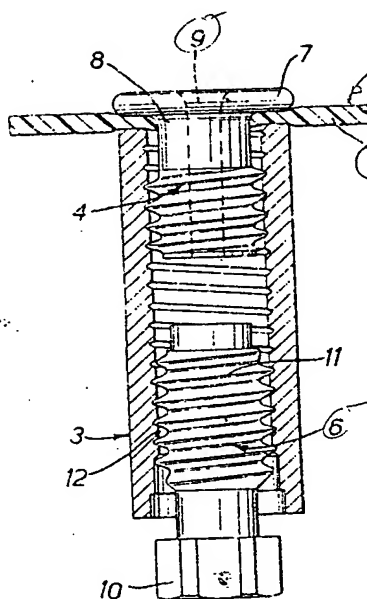


FIG. 2.